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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,065	09/10/2003	Ruth E. Shefer	6931	3821
55740	7590	09/21/2005	EXAMINER	
GAUTHIER & CONNORS, LLP 225 FRANKLIN STREET BOSTON, MA 02110			SONG, HOON K	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/659,065	Applicant(s) SHEFER ET AL.	
	Examiner Hoon Song	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 35-70 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35-57 and 64-67 is/are allowed.
- 6) ☒ Claim(s) 58, 60-63, 68 and 70 is/are rejected.
- 7) ☒ Claim(s) 59 and 69 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/18/2005</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 58, 60-63, 68 and 70 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishijima et al. (US 4172223).

Regarding claim 58, Ishijima teaches a system for controlling the X-ray output of an X-ray tube, said system comprising:

an X-ray tube (1) that emits an X-ray output through a window in response to a control signal;

an X-ray detector (8) on which substantially all of the X-ray output impinges, said X-ray detector providing a detected X-ray signal indicative of a property of the X-rays that are emitted by the X-ray tube through the window; and

a control system (9) that receives said detected X-ray signal and adjusts said control signal responsive to changes in conditions within said X-ray tube to ensure that said X-ray output signal is substantially maintained at a predetermined value (column 1 line 49-55).

Regarding claim 60, Ishijima teaches said X-ray detector provides a filter function (compensation of deterioration is considered a filter function).

Regarding claim 61, Ishijima teaches a system for controlling the X-ray output of an X-ray tube, said system comprising:

an X-ray tube (1) that emits an X-ray output through a window in response to a control signal;

an X-ray detector (8) that is at least adjacent said window and on which at least some of the X-ray output impinges, said X-ray detector providing a detected X-ray signal indicative of a property of the X-rays that are emitted by the X-ray tube through the window; and

a control system (9) that receives said detected X-ray signal and adjusts said control signal responsive to changes in conditions within said X-ray tube to ensure that said X-ray output signal is substantially maintained at a predetermined value (column 1 line 49-55).

Regarding claim 62, Ishijima teaches said changes in conditions within the X-ray tube include changes in leakage currents within the X-ray tube (the deterioration is considered the leakage).

Regarding claim 63, Ishijima teaches said changes in conditions within the X-ray tube include changes in any of the size, shape or location of electrons on an anode within the X-ray tube (the deterioration is considered the changes).

Regarding claim 68, Ishijima teaches a method of controlling the X-ray output of an X-ray tube, said method comprising the steps of:

providing an X-ray tube (1) that emits an X-ray output through a window in response to a control signal;

providing an X-ray detector (8) that is at least adjacent the window and on which at least a portion of said X-ray output impinges,

providing a detected X-ray signal indicative of a property of the X-rays that are emitted by the X-ray tube (1); and

adjusting said control signal responsive to changes in conditions within the X-ray tube to ensure that said detected X-ray signal is substantially maintained at a predetermined value (column 1 line 49-55).

Regarding claim 70, Ishijima teaches said X-ray tube includes an X-ray producing target and said X-ray detector is positioned substantially close to said X-ray producing target (figure 3).

***Allowable Subject Matter***

Claims 35-57 and 64-67 are allowed over prior art.

Claims 59 and 69 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art fails to teach a system for controlling the x-ray output of an x-ray tube having an x-ray transmissive x-ray detector through which at least a portion of said x-ray output passed that detects x-ray emitted from said x-ray tube and provide a detected x-ray signal indicative of a property of the x-rays that are emitted by the x-ray tube and a control system that receive said detected x-ray signal and adjust said control

signal responsive to changes in conditions within said x-ray tube to ensure that said output signal is substantially maintained at a predetermined value as claimed in claims 35, 59, 64 and 69.

### ***Response to Arguments***

Applicant's arguments with respect to claims 58, 60-63, 68 and 70 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HKS

9/18/05  
HKS



DAVID V. BRUCE  
PRIMARY EXAMINER